



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/620,553	07/17/2003	Moshe Ein-Gal	1307EIN-US	9245
7590 Dekel Patent Ltd. Beit HaRofim Room 27 18 Menuha VeNahala Street Rehovot, ISRAEL			EXAMINER LAURITZEN, AMANDA L	
			ART UNIT 3737	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		04/10/2007	PAPER	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

ED

**Office Action Summary**

Application No.

10/620,553

Applicant(s)

EIN-GAL, MOSHE

Examiner

Amanda L. Lauritzen

Art Unit

3737

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 20 February 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 20-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 20-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

***Response to Arguments***

Applicant's arguments filed 20 February 2007 with respect to the Final rejection and Advisory action have been fully considered but are not persuasive.

1. Applicant suggests that the apparatus of Hassler contains only one membrane, but it in fact has two. The first is the external membrane pointed out by Applicant (and disclosed at col. 6, lines 55-57) and the second is denoted by [1] in the same figure and disclosed at col. 5, lines 19-22 to surround reflector [33]. Furthermore, Examiner maintains that it is well known in the art to include a membrane to shield source devices and their associated reflectors from the propagation medium and cites evidence for this in the conclusion.
2. Spatial adjacency is clear in Fig. 3 of Grunewald. The "membrane" pointed out by Applicant of Fig. 3 of Grunewald is not identified as a membrane in the disclosure of Grunewald; however, the sealing ring of the first device is in fact a membrane through which the second device passes and therefore the limitations of the claim are met by the combination of Hassler and Grunewald.
3. The final Office Action dated 22 September 2006 covers all limitations of the claims and therefore rejections are maintained with the prior art of record.

**DETAILED ACTION**

***Information Disclosure Statement***

1. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609.04(a) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless

Art Unit: 3737

the references have been cited by the examiner on form PTO-892, they have not been considered.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35

U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
  2. Ascertaining the differences between the prior art and the claims at issue.
  3. Resolving the level of ordinary skill in the pertinent art.
  4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
2. Claims 20-25 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hassler et al. (U.S. Patent No. 5,058,569) in view of Grunewald et al. (U.S. Patent No. 5,224,468).

Regarding claims 20-23 and 25, Hassler '569 discloses a shockwave source device comprising a cylindrical acoustic wave transducer sealed within an excitable membrane and having a longitudinal axis of symmetry (col. 4, lines 10-12; see also coil shockwave source 2 and membrane 1 of Fig. 1) with an at least partially parabolic reflector 33 that is disposed symmetrically on both sides of the longitudinal axis with an end face covered by a membrane (col. 5, lines 19-22). Hassler further discloses a propagation medium filling the inner volume of

Art Unit: 3737

the reflector that separates the reflector from the acoustic wave transducer such that the acoustic waves are reflected towards a focus (col. 5, lines 10-12; lines 30-33). An aperture is formed in the reflector that surrounds the first shockwave source device that is located on the longitudinal axis of symmetry and sealed by a sealing ring (see bore 31 and sealing ring 32; also col. 4, lines 63-68 and col. 5, lines 3-4). The membrane surrounding the source device is excited and moved by the excitation device to generate shockwaves (see voltage generator 20 and col. 5, lines 58-65). A second membrane 1 is disclosed at col. 5, lines 19-22 to surround reflector 33.

Hassler '569 does not disclose a second shockwave source device but Grunewald '468 discloses a shockwave generating system with two longitudinally axisymmetric shockwave source devices with the second spherical acoustic wave source disposed in an aperture and adapted to emit acoustic waves to a common focus (see first source device P and second source E of Fig. 3; col. 3, lines 35-40). The spatial adjacency of the sources suggests the second device sealingly passes through the membrane (here, the sealing ring is in fact a membrane) of the first device.

Regarding claim 24, the second shockwave source device E of Grunewald '468 is disclosed as a spherical acoustic wave transducer in the embodiment of Fig. 3.

Regarding claim 28, the second shockwave source device E of Grunewald '468 is disclosed as a planar acoustic wave transducer with a focusing lens L that is adapted to focus the shockwaves in the embodiment of Fig. 2.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the invention of Hassler '569 to incorporate a second shockwave source (either planar or spherical) as taught by Grunewald '468 to superposition shockwaves of

Art Unit: 3737

differing characteristics, such as energy density or focus size, by operating the first and second sources independently for improved disintegration of a calculus (see Grunewald '468 col. 1, line 58 – col. 2, line 2).

3. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hassler et al. (U.S. Patent No. 5,058,569) in view of Grunewald et al. (U.S. Patent No. 5,224,468) and Reichenberger (U.S. Patent No. 4,976,255). The modified invention of Hassler '569 adheres to the invention substantially as claimed except for the first and second shockwave source devices being arranged with respect to one another to focus on different foci.

Reichenberger '255 discloses a first shockwave source device for generating a first focus and a second shockwave source device (therapeutic ultrasound source) converging at a second focus (col. 2, lines 47-60).

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to have combined the modified invention of Hassler '569 with the teaching of Reichenberger such that the device was capable of generating two different foci for the purpose of eliminating multiple calculi simultaneously.

4. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hassler et al. (U.S. Patent No. 5,058,569) in view of Grunewald et al. (U.S. Patent No. 5,224,468) and Ein-Gal (U.S. Patent No. 7,048,699). The modified invention of Hassler '569 adheres to the invention substantially as claimed except for the first shockwave source device comprising a conical acoustic wave transducer.

Art Unit: 3737

In the same field of endeavor, Ein-Gal '699 discloses a conical acoustic wave transducer enclosed by a membrane for generating shockwaves in a propagation medium (col. 4, lines 53-58).

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to have used a conical acoustic wave transducer for the first shockwave source device of the modified invention of Hassler '569, as Ein-Gal teaches the use of a conical transducer for the purpose of directing the focus of the acoustic waves at the apex of the conical transducer (col. 2, lines 33-36).

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Dory's Ultrasonic pulse apparatus for destroying calculuses (U.S. Patent No. 4,617,931) is relevant regarding use of a spherical acoustic wave transducer in shockwave lithotripsy. Oppelt (US 5,279,282) for a vibratory membrane in a shockwave source device. Hassler (US 5,309,897) for a source device with vibratory membrane and propagation medium (Abstract) and an associated reflector [21] having a membrane [12] that coincides with it (col. 4, lines 31-32; also col. 5, lines 7-10). Grunewald (US 5,174,280) for a source surrounded by radiating membrane (col. 3, lines 43-64) and a reflector with a surrounding membrane that "closes the interior of that liquid-filled space and couples the device acoustically to the body of the patient" (col. 5, lines 1-12).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amanda L. Lauritzen whose telephone number is (571) 272-4303. The examiner can normally be reached on Monday - Friday, 8:30am - 5:00pm.

Art Unit: 3737

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian L. Casler can be reached on (571) 272-4956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



A. Lauritzen  
4/2/2007



BRIAN L. CASLER  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 3700